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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 23413 | 7590 | 05/31/2006 | | |
| CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 | | | EXAMINER ZEMEL, IRINA SOPJIA | |
| | | | ART UNIT | PAPER NUMBER |

1711

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,321

Applicant(s)

BOGERD ET AL.

Examiner

Irina S. Zemel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-28 and 30-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-28, 30-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/22/06; 4/24/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 , 3-25, 27-28, 30-34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in combination with Adachi or, in the alternative, as being unpatentable over Döbler in combination with Adachi and further in view of US Patent 4,648,710 to Ban et al., (hereinafter "Ban").

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Adachi et al. as applied above, and further in view of Burkhardt et al.

Claims 13-16 and 26-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Adachi et al. and further in view of MacGregor et al.

The disclosure and teachings of Döbler and all of the secondary references is expressly discussed in detail in the previous office action. The reference meets all of the limitations of the claimed core layer and one cap layer with the exception of the specifically claimed boride IR absorbing additive. The previous office action discussed motivation of adding/substituting the IR absorbents of Döbler with the boride additives of Adachi. In addition to the discussed obviousness of combining these two references, the examiner wishes to point out that the Adachi reference expressly discloses that adding the claimed boride IR absorber to a transparent polymeric based composition results in certain optical properties such as blocking lights of certain colors or with

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specific wavelength and improved solar energy reflection. This properties of boride additives by itself is enough motivation to add such additive to any transparent polymer base composition to achieve the results the boride compounds are characteristic of.

As far as adding a second cap layer as now claimed in the base claim 1 and claim 36 (similar to the A layer of Döbler) on top of the B layer, such addition is viewed as mere duplication of parts for the intended purpose, i.e., to increase the UV absorbency of the final structure. As well established by the law, duplication of parts (in the instant case, addition of exactly the same layer) is not considered inventive, absent showing of unexpected results that can be clearly attributed to the addition of such layer to the core layer on the side opposite to the side the first layer is added. It is further noted that the second cap layer is placed in the structures claimed in the instant invention for exactly the same reasons as per disclosure of the instant application. Therefore, the claimed structures would have been obvious from the disclosure of Döbler as modified by the teachings of Adachi.

In the alternative, the claimed limitations of the second cap layer would have been obvious from the teachings of Döbler, since the Döbler reference expressly discloses A-B-C structures with the C layer being a solar reflective film. Solar reflective films that comprise electromagnetic radiation absorbing additives are known in the art and commercially available on the market. See for example, disclosure of Ban, specifically figure 2a, which discloses (as known prior art) reflective films containing radiation absorber additive. Applicants should note that the claimed cap layers are not either define in structure or properties and, as such, are met by any structure

comprising a polymeric base and some components reflecting some minimal electromagnetic radiation.

Therefore, the invention as claimed would have been obvious from the combined teachings of the above cited references.

Claims 35, 37-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Adachi.

The disclosure of both references is expressly discussed in detail in the previous office action and in the instant action as set forth above. The difference between the newly added claim 35 and claim 1 pending prior to the instant amendment is the thickness of the core layer which is recited as "about 0.5 to about 30 mm". This limitation is clearly met by the disclosure of Döbler in {0037-40}. The reference expressly states that when the layer B, or the layer with the IR absorbing additives, is designed as a substrate, its thickness should be about 3-5 mm, thus anticipating the claimed limitation. All limitations of dependent claims (with the exception of claim 36) are also met by Döbler (in combination with Adachi) as discussed in the previous office action and applicable to the previously presented claims 3-21.

Claims 1, 3-25, 27-28, 30-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Fujita et al., or in the alternative, over Döbler in view of Fujita et al., in combination with Ban.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Fujita et al. as applied above, and further in view of Burkhardt et al.

Claims 13-16 and 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Adachi et al. and further in view of MacGregor et al.

The rejections stand as per reasons of record.

The disclosures of Döbler in view of Fujita et al., are discussed in detail in the previous office actions. As per discussions set forth above, addition of the second cap layer is considered obvious under the duplication of parts arguments. In the alternative, the claimed cap layer would have been obvious from the disclosure of Ban as per discussion above.

Double Patenting

Claims 1, 3-28, 30-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 and 24-39 of copending Application No. 11/124,223.

The rejection stands as per reasons of record.

Response to Arguments

Applicant's arguments filed 3-14-2006 have been fully considered but they are not persuasive. The applicants argue that Döbler teaches interference layer comprising at least two layers, while the claimed invention claims a single layer having a single refractive index. This is not so. The layer claimed as the second cap layer is not defined as having any structure or characteristics, and, thus, would have been met by any layer with any structure as long as it has a polymer (in any amount) and an additive (in any amount). The applicants further argue that Döbler does not teach the claimed

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boride additive. The examiner acknowledged that fact and brought in the teachings of Adachi that make incorporation of such additive in the B layer of Döbler obvious. The applicants argue that Adachi teaches thermosetting polymers and not the thermoplastic polymers as taught by Döbler. While this may be so, the Examiner does not see how it is relevant to the modification of Döbler. As discussed above, Adachi reference discloses certain optical characteristics light reflection etc.,) that are achieved in compositions based on transparent polymers. The additive, i.e., lanthanum boride with specific physical characteristics is a non-reactive component which action is based on its physical properties. It is expected to act similarly in any transparent substance whether thermoplastic or thermosetting or even non-polymeric. Thus, in the absence of showing that the effect of non-reactive additive is different in one transparent medium versus another, such addition is considered to have been obvious. The applicants further argue that the examiner incorrectly interpreted some solubility requirement for an IR absorber and thus, the motivation to combine the teachings of Adachi and Döbler are logically incorrect. This argument is irrelevant. As discussed above, the properties of LaB6 and effect it brings to transparent polymeric films is enough motivation by itself to incorporate this component into reflective layer B of Döbler.

The applicants' arguments regarding processability differences of thermoplastic and thermosetting materials are not, at best, understood. The differences are notoriously known and are not expected to change by adding a powdery non-reactive filler such as LaB6 to either one of the compositions. Moreover, the applicants' arguments that thermosetting materials cannot be extruded are incorrect from the

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engineering point of view. Thermosetting materials (especially those that are cured via radiation) are conventionally extruded (or co-extruded) and subsequent to the extrusion cured with radiation.

The applicant's arguments regarding teachings of LeCellophane reference are moot in view of this reference is not applied in the rejections set forth above.

The arguments regarding rejection over Döbler in view of Fujita are similar to the arguments presented in the discussion of Döbler reference. The argument regarding C1 and C2 layers of Döbler are discussed above and still considered to be legally incorrect interpretation of the pending claims.

All other applicant's arguments are arguments directed to the deficiencies of the two primary references, i.e., Döbler and Adachi, and do not provide any additional substantive arguments.

Therefore, all of the pending claims are considered obvious over the combined teachings of the respective reference and are rejected as set forth above.

Information Disclosure Statement

The information disclosure statement filed 5-22-2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irina S. Zemel
Primary Examiner
Art Unit 1711



ISZ